A change of style

Interactive pen display
Wacom Cintiq 18sx

by Lidka Schuch

Pressure-sensitive tablets have been out there for a while, and almost any digital artist who likes to dabble in brushwork will have one. A stylus is surely a superior drawing tool to a mouse, but using a tablet and stylus still necessitates working on a desktop while at the same time looking straight ahead at a monitor. Working like this is neither easy nor comfortable, but "only a second-grade ballerina blames her tutu for getting in the way of her dancing", thus many artists have learned to excel with this configuration.

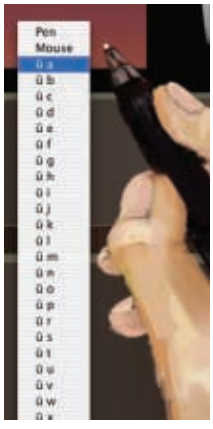
However, to see a drawing or painting take shape on your canvas in real-time, as you create it—*this* is still the ideal, just as it was for artists in the good old days.

The idea of a pressure-sensitive monitor is not new—touch-screens are widely used in cash registers, and interactive displays have been used for sales presentations for a while. But the Wacom series of Cintiq *interactive pen displays* adds high resolution 24-bit LCD display technology good enough to satisfy an artist…well, almost good enough.

Wacom's Cintiq displays, available in 15" and 18" models, could represent an important first step in pioneering a pressure-sensitive, high-resolution, screen-based interface for artists and designers. But they come at a healthy price—US$1,899 (~CDN$2,750) for the 15x model, or US$3,499 (~CDN$5,300) for the 18sx.

TAKING THE 18SX FOR A SPIN

The Cintiq 18sx, released in May 2002, offers a welcome improvement in LCD technology—distortion-free viewing up to 160° in all directions. It displays images at 1280 x 1024 pixels in 24-bit resolution in its 14.1"x 11.3"active image area. The display includes a Grip Pen with an integrated silicon rubber area which reduces gripping effort and responds to 512 levels of pressure—twice the number of tones available per color in RGB.



PROGRAMMABLE POPUP MENU. **The Grip Pen, like any other stylus, comes with a DuoSwitch, a clicker with two positions. Either position can be programmed for a selected option from the pulldown list. The Popup Menu (left) is a must because it provides easy access to many keyboard shortcuts without using a keyboard. PopUp Menu options are located in the Wacom Tablet control panel dialog window. The pen can also be programmed to be application-dependent. For example, since the Option key is probably the most common modifier in Adobe Photoshop, one clicker could be programmed to simulate the Option key. The most common shortcuts in QuarkXPress include Command plus Shift (Mac) or Control plus Shift (Windows). The same clicker could be programmed to simulate these key combinations for use just in XPress. The Popup Menu is a great idea, but it's not completely bug-free. In OS X, when I tried to use an Apple icon as a shortcut for the word "Command", I got a "ù" (apparently a problem with the Mac's conversion to Unicode). In OS 9.2, Apple icons looked as they should, but I couldn't take a screen grab because the windowing system only permits this function after the menu is closed.**

THE UPS

Easy setup. The Cintiq has one single wire containing the power, video and tablet communications. Video interfaces for analog (VGA) and digital (DVI) connections as well as USB and serial tablet connections are all included. No special port is needed and the whole operation of plugging it in and setting it up takes just a few minutes.

Direct on-screen interaction. An interactive pen display allows users to interact directly with images, and this is the Cintiq's most important feature. By making the creation of artwork more like it was before computers, we can focus more on the work and less on hand-eye gymnastics. Nevertheless, hand-eye coordination will continue to be an important component of the process—at least, until a true neural interface is perfected.

A more comfortable way to work. The Cintiq stand rotates a full 360 degrees and inclines to any desktop angle between 13 and 70 degrees. The comfort of being able to rest one's elbows lightly on the display might even make tendonitis go away.

There are three possible basic positions: Tablet Mode, Display Mode and Lap Mode.

Tablet Mode, inclined less than 32°, is good for leaning over to draw or paint (just like over a drafting table). In this mode, Cintiq rotates a full 360° without touching the desk. Display Mode (with Cintiq standing vertical) is more useful for work requiring keyboarding. In Lap Mode, the display is removed from the stand and rests between the edge of a desk and the user's lap.

The near-real paper feel. Cintiq's anti-glare and friction-coated surface in concert with the Wacom Grip Pen stylus produces a feel that is closer to pen and paper

than any other interface I have used. It's unbeatable for anyone who paints or draws or sketches. Not only that, but the heat generated by the display will keep your hands healthy and agile!

Any artist who uses brushes and pens will fall in love with the Cintiq—and so did I. When I began losing myself in Corel Painter, only the missing smell of linseed oil and turpentine stopped me from imagining that I was in a bright studio with easels, canvas, brushes, palettes and tubes of paint scattered everywhere. Since so many digital artists work in dark and bland-looking interiors, this elevating, real-life feeling was welcome and precious.

WACOM CINTIQ 18SX

Display Specifications

LCD Screen Size — 18.1"
LCD Active Area — 14.1" x 11.3"
Max LCD Resolution — 1280 x 1024 (SXGA)
Color Depth — 24-bit
Contrast Ratio — 300:1
Brightness (cd/m2) — 210
Viewing Angle (L/R, U/D) — 80/80, 80/80

Pen Input Specifications

Pen & Eraser Pressure — 512 levels
Programmable Pen Switches — Eraser and two side switches
Coord. Accuracy Center — ± 0.02"
Tablet Reading Height — 0.2"
Report Rate — 205 point/sec
Battery Free — Yes
USB Serial Connector — USB Plug A
RS-232 Serial Connector — DB-9pin Female

Mechanical Specifications

Dimensions (LxHxD) — 18.4" x 16.0" x 2.8"
Weight (excluding stand) — 7.7 kg (17.0 lbs.)
Incline Adjustment — 13° to 70°
Display Rotation — ± 180°
Stand Attachment — VESA 100mm with 70mm aperture

Pricing

US$3,499 [~CDN$5,300]

Wacom Technology
Web www.wacom.com

The beginning of handwriting recognition technology. The combination of Apple's Inkwell software (built on Apple's Recognition Engine) and the Wacom tablet may be the beginning of true on-screen handwriting recognition technology, and it may even mean getting rid of a keyboard and mouse for good—at least for visual artists.

The Ink Control Panel is installed with OS 10.2 (Jaguar), but a pressure-sensitive Wacom tablet—running on Wacom's driver version 4.72-5 or later—must be connected to use it.

A floating Inkpad window appears when the Handwriting Recognition option is turned on in the Ink Control Panel. You can write text in Text mode or sketch in Graphic mode, and then send text (automatically converted to type) or a drawing (as a greyscale image) to the active program, including e-mail. Inkpad also has a popup Corrector feature (in Stylus Mode, tap once on the word to correct it, then press the stylus and hold it to see the popup correction options). To top it off, Inkpad has icons for all four modifier keys which makes using keyboard shortcuts possible without a keyboard. And it provides a set of twelve gestures for common functions such as copy, paste, select all, delete, insert space, or insert paragraph (called Vertical Space).

Although tricky to learn, Inkwell is a brilliant version 1.0 app and promises a future simplified by the elimination of keyboard and mouse.

Perfect for video and games. The Cintiq 18sx has both analog and digital video interfaces, important because it means that it is both backward-compatible with the large installed base of VGA monitors and forward-compatible with the emerging DVI video standard. This is a definite bonus for video artists—or, for that matter, anyone who plays games or watches movies.

THE DOWNS

It's big and heavy. Measuring 18.4 inches wide by 16 inches high and weighing in at almost eight kilograms (17 lbs) plus a two-kilo stand, the Cintiq 18sx is not easy to put aside when access to a keyboard or mouse is temporarily needed. And even for the average person, using the display as a laptop without the stand feels like being stuck under a patio stone—just picking up a dropped stylus can be an ordeal.

Ergonomics are a battle. In its most horizontal position, the unit is almost three inches higher than a desktop, and this is a bigger issue than one might think. In order to sit and use it, a chair seat has to be much higher than normal typing height. But a regular desk chair doesn't have the appropriate height.

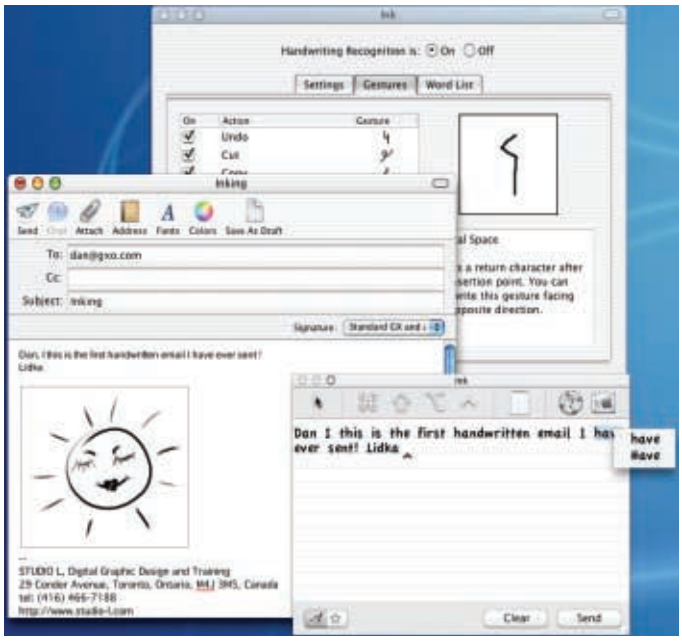
A desk with a pullout keyboard shelf turned out to be useless. Leaning over the display involves sitting both higher and closer, but the keyboard shelf kept getting in the way of my knees.

In the end, I concluded that a drafting chair with a built-in footrest (so my feet don't dangle) would probably provide the most comfortable seating position.

However, by the time I'd finished my testing, my elbows were hurting and my back was aching. Better think about furniture before getting one of these godzillas.

Forget about using a dual monitor setup. Letting go of the notion of working on two monitors simultaneously was most disappointing. Digital artists dream of a larger work area, and the idea of keeping pallets on one monitor and work in progress on the other is very appealing.

Technically, the Cintiq can be used in conjunction with another monitor (although two graphic cards are needed), but in practice there's a simple reason why it



HANDWRITING RECOGNITION. **Using Apple's Inkwell technology, a word can be corrected by tapping on it once, then pressing and holding the stylus to see the correction options, except that the popup list doesn't have enough choices. For instance, three characters which can potentially confuse the software are the number 5, the letter S and ↵ (the symbol for a line break). All instances of "S" and "5" will be found on the list, but there's no symbol for a line break (Vertical Space).**

won't work: the Cintiq display is pressure-sensitive, but a regular monitor can only be accessed with a mouse, not a stylus. Imagine having to drop your stylus and grab your mouse every time you want to change tool options or switch from one tool to another. Don't buy the second graphics card, because you won't use it.

LCD color display and calibration are still inferior to CRT. Unfortunately there's still no comparison between the quality of CRT monitors and LCD displays. Even after calibration, colors on Wacom's LCD looked too saturated; details in shadow areas were lost, and type didn't look nearly as crisp as it did on a standard 19" CRT.

Cintiq ships with an ICC profile, compatible with both MS Windows ICM and Macintosh ColorSyncCalibration. Since monitor calibration in Mac OS X (through the Displays panel in System Preferences) is very simple, this should be a flash. But awkward manoeuvring with the control buttons panel on the back of the display (which is shown in the manual from the front view, forcing me to follow an upside down schematic), made adjustments very difficult. Dialog windows only remain on screen for 30 seconds, so you better read them fast. It was very frustrating to attempt to set Red, Green and Blue gamma points, and impossible to set in greyscale, so I used the expert options to see a curve for each channel. And the results were far from perfect.

On-screen visual distractions are annoying. First, the pointer icon is always visible. This is quite bothersome, but I eventually got used to it.

Second, whether you're right-handed or left-handed, you will cover up any pull-down menu with your hand when you activate it. The only solution I could find was to hold the stylus at a different angle, pointing up with the eraser and sticking out slightly to one side of my hand.

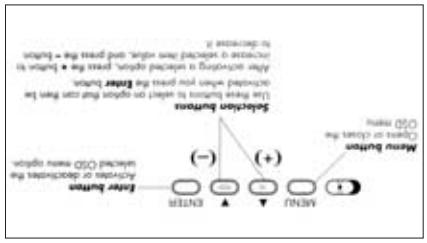
THE WISH LIST

My three wishes for improvements in the Wacom Cintiq 18sx are simple.

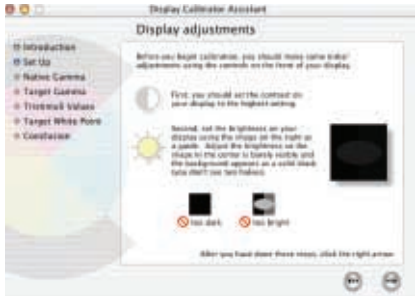
Make it lighter. It's just too darn heavy to use as a peripheral.

Improve the color fidelity. Cintiq uses the best LCD technology, but even the best is still not quite good enough for fine graphics, especially if the output is to high end color printing.

Add a keyboard, or perfect Apple's Inkwell interface. Apple Inkwell software in combination with any pressure-sensitive

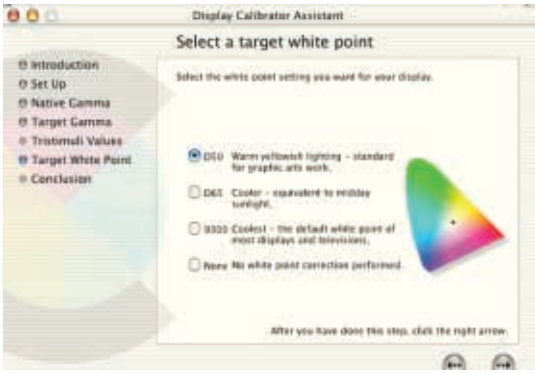


COLOR CALIBRATION. **As with any monitor, on-screen controls are needed to calibrate the Cintiq display. The buttons are located at the back of the display, but unfortunately, the schematic in the manual is shown from the front view. As it turned out, it was actually easier to follow the instructions for the button controls once the manual was turned upside down. As well, the on-screen menu only stays open for 30 seconds, so you better figure it out fast.**



It was also extremely difficult to set the targeted gamma per channel, and outright impossible to set all three channels together in greyscale (below). No matter how much I squinted and no matter how much I adjusted the brightness and contrast settings...

...the apple just didn't want to melt into the background. Expert options must definitely be used to set gamma per channel.



For print output, the white point should be set at 6500° Kelvin (right)—the recommended setting of 5000° (left) is much too yellow. Use the Expert options to control the slider rather than choosing from the pre-set list.

tablet could very well be the ultimate solution for visual artists, but not for writers and typographers. And what about people like me, who sometimes paint and photo-edit, sometimes write, and more often do both at the same time?

Keyboards are usually lightweight, but together with a mouse and cabling they can take up a lot of space. The constant need to reposition all that equipment isn't healthy for us or for the equipment. Perhaps building a keyboard right into the display's frame would simplify the whole workflow setup and create true bi-directional connectivity.

A CONCEPT WORTH PURSUING

Granted, there are improvements that could (and undoubtedly will) be made to Cintiq technology; and yes, it is relatively expensive for an accessory which still needs some fine tuning.

But one thing is certain. Wacom's interactive pen display is a wonderful first attempt to invent a better interface between artists and their personal computers. And speaking from personal experience, I will say that for anyone primarily using brushes and pens, there's no question that the creative pleasure a Cintiq 18sx provides is worth every penny.

Lidka Schuch is president of Toronto-based Studio L (www.studio-L.com), a design studio and training facility offering customized courses in high end desktop graphics for graphic arts professionals.

Hand and Stylus. **This digital illustration (below), which I painted in Corel Painter, seemed most appropriate since this is what I saw continually while working with Wacom's Cintiq 18sx interactive pen display. It was done entirely on the Cintiq with grip stylus, on a Power Mac G4 running OS X.**